Differences in anthropometric and physical performance measures in law enforcement officers based on age groups

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DIFFERENCES IN ANTHROPOMETRIC AND PHYSICAL PERFORMANCE MEASURES IN LAW ENFORCEMENT OFFICERS BASED ON AGE GROUPS

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ABSTRACT

PURPOSE: To identify possible differences in anthropometric and physical performance (PP) measures between different age groups in law enforcement officers (LEO).

METHODS: The cross-sectional study included 769 healthy male LEO (mean age=27.43 ± 11.98 yrs; mean body mass (BM)=78.87 ± 14.46 kg; mean height (BH)=173.89 ± 5.86 cm), divided into three age groups: ≤ 25 yrs (n=255, mean age=24.02 ± 9.90 kg; mean BH=172.34 ± 6.76 cm); 26-30 yrs (n=355, mean age=27.56 ± 5.86 kg; mean BH=172.11 ± 5.42 cm); and 31-35 yrs (n=159, mean age=32.00 ± 3.32 yrs; mean BM=79.87 ± 11.98 kg; mean BH=173.89 ± 5.86 cm). Collected anthropometric variables included: BM, BH, BMI, Waist Circumference (WC) and Waist to Height Ratio (WHtR). Tested PP related to local muscular endurance (1-minute Push-Up test (PU)) and aerobic endurance (2.4 km run test (RU)). Data were collected as a part of preselection process for an Abu Dhabi Police LEO postgraduate course. The one-way ANOVA with Bonferroni post-hoc adjustment was used for identifying possible changes between age related groups, with significance set at p≤0.05 a priori.

RESULTS: When compared to the 26-30 and 31-35 yrs groups, the ≤25 yrs group had a significantly lower BMI (-0.78 kg/m², p=0.038 and -1.37 kg/m², p=0.002) and WHtR (-0.016, p=0.009 and -0.016, p=0.009) and WC (-2.43 cm, p=0.001) and RU (-19.78 sec, p<0.001). In addition, when compared to the 26-30 yrs group, the ≤25 yrs group had significantly lower BMI (-0.78 kg/m², p=0.038 and -1.37 kg/m², p=0.002) and WHtR (-0.016, p=0.009 and -0.016, p=0.009) and WC (-2.43 cm, p=0.001). When compared to the 26-30 and 31-35 yrs groups, the 25 yrs group had a significantly lower BMI (-0.78 kg/m², p=0.038 and -1.37 kg/m², p=0.002) and WHtR (-0.016, p=0.009 and -0.016, p=0.009) and WC (-2.43 cm, p=0.001). When compared to the 26-30 yrs group, the 31-35 yrs group had a significantly lower BMI (-0.78 kg/m², p=0.038 and -1.37 kg/m², p=0.002) and WHtR (-0.016, p=0.009 and -0.016, p=0.009) and WC (-2.43 cm, p=0.001). When compared to the 26-30 yrs group, the 31-35 yrs group had a significantly lower BMI (-0.78 kg/m², p=0.038 and -1.37 kg/m², p=0.002) and WHtR (-0.016, p=0.009 and -0.016, p=0.009) and WC (-2.43 cm, p=0.001). When compared to the 26-30 yrs group, the 31-35 yrs group had a significantly lower BMI (-0.78 kg/m², p=0.038 and -1.37 kg/m², p=0.002) and WHtR (-0.016, p=0.009 and -0.016, p=0.009) and WC (-2.43 cm, p=0.001).

CONCLUSIONS: This study identified significant differences between age groups with negative impacts of age on anthropometric variables, especially with those related to body weight and which correlated with health status (i.e. BMI, WC and WHtR), and all tested physical abilities.

RESULTS:

purposes: The main purpose of this study was to investigate the possible negative effects of aging on anthropometric measures, as well as the physical performance of police officers. The information obtained will be useful for appropriate intervention in terms of raising awareness about the potential negative consequences of aging. It is particularly important to point out possible health risk factors as well as factors that interfere with the successful performance of everyday duties.

ABSTRACT

PURPOSE: To identify possible differences in anthropometric and physical performance (PP) measures between different age groups in law enforcement officers (LEO).

METHODS: The cross-sectional study included 769 healthy male LEO (mean age=27.43 ± 11.98 yrs; mean body mass (BM)=78.87 ± 14.46 kg; mean height (BH)=173.89 ± 5.86 cm), divided into three age groups: ≤ 25 yrs (n=255, mean age=24.02 ± 9.90 kg; mean BH=172.34 ± 6.76 cm); 26-30 yrs (n=355, mean age=27.56 ± 5.86 kg; mean BH=172.11 ± 5.42 cm); and 31-35 yrs (n=159, mean age=32.00 ± 3.32 yrs; mean BM=79.87 ± 11.98 kg; mean BH=173.89 ± 5.86 cm). Collected anthropometric variables included: BM, BH, BMI, Waist Circumference (WC) and Waist to Height Ratio (WHtR). Tested PP related to local muscular endurance (1-minute Push-Up test (PU)) and aerobic endurance (2.4 km run test (RU)). Data were collected as a part of preselection process for an Abu Dhabi Police LEO postgraduate course. The one-way ANOVA with Bonferroni post-hoc adjustment was used for identifying possible changes between age related groups, with significance set at p≤0.05 a priori.

RESULTS: When compared to the 26-30 and 31-35 yrs groups, the ≤25 yrs group had a significantly lower BMI (-0.78 kg/m², p=0.038 and -1.37 kg/m², p=0.001), WC (-2.43 cm, p=0.009) and WHtR (-0.016, p=0.002 and -0.016, p=0.001) while no differences in BM were observed (-1.44 kg, p=0.206 and -2.90 kg, p=0.651). LEO from the 26-30 yrs group differed from the 31-35 yrs group in WC (-2.43 cm, p=0.001) and RU (-19.78 sec, p<0.001). When compared to the 26-30 and 31-35 yrs groups, the 25 yrs group had a significantly lower BMI (-0.78 kg/m², p=0.038 and -1.37 kg/m², p=0.002) and WHtR (-0.016, p=0.009 and -0.016, p=0.009) and WC (-2.43 cm, p=0.001). When compared to the 26-30 yrs group, the 31-35 yrs group had a significantly lower BMI (-0.78 kg/m², p=0.038 and -1.37 kg/m², p=0.002) and WHtR (-0.016, p=0.009 and -0.016, p=0.009) and WC (-2.43 cm, p=0.001).

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